

MARKED-UP COPY OF THE CLAIMS AS AMENDED
(Provided for the Examiner's convenience only)

- 1-104. (Cancelled)
105. (Currently Amended) A method of selecting a dose of an anti-oxidant composition for administration to a human, the method comprising assessing an occurrence in a human's genome of a quantity of an oxidative damage-associated polymorphism polymorphisms in each of two genes, the genes consisting of a superoxide dismutase gene and a catalase gene whereby each occurrence of an oxidative damage associated polymorphism in each gene indicates an increased susceptibility of the human to a pathology involving oxidative damage to the human, relative to a human with fewer or no disorder oxidative damage associated polymorphisms, and wherein the method assesses a relative susceptibility of the human to oxidative damage.
- wherein the oxidative damage-associated polymorphism in the catalase gene is a polymorphism manifested as a change from a cytosine residue to a thymine residue at nucleotide residue -262 of the catalase gene and the oxidative damage-associated polymorphism in a superoxide dismutase gene is selected from the group consisting of:
- a) a polymorphism manifested as a change from an alanine residue to a valine residue at amino acid residue 9 of manganese superoxide dismutase (MnSOD);
 - b) a polymorphism manifested as a change from an isoleucine residue to a thymine residue at amino acid residue 58 of MnSOD;
 - c) a polymorphism manifested as a change from a valine residue to a glutamic acid residue at amino acid residue 7 of copper/zinc superoxide dismutase (CZSOD); and
 - d) a polymorphism manifested as a change from a cysteine residue to a phenylalanine residue at amino acid residue 6 of CZSOD;

whereby each occurrence of an oxidative damage-associated polymorphism in each gene indicates an increased susceptibility of the human to a pathology involving oxidative damage to the human, relative to a human with fewer or no oxidative damage-associated polymorphisms; ~~and wherein the method assesses a relative susceptibility of the human to oxidative damage.~~

106-109. (Cancelled)

110. (Currently Amended) The method of claim 105, the a method comprising assessing ~~a relative~~ the degree to which a human is susceptible to an undesirable oxidative stress condition by identifying a polymorphism in each of a gene encoding superoxide dismutase, and a gene encoding a catalase,

the polymorphism identified as correlated with the exhibition by a human of a pathology involving oxidative damage, thereafter calculating a susceptibility value for the condition by either

summing the identified polymorphisms to yield a value for the human, or assigning a weighting factor to each polymorphism and then summing the weighting factors to yield a value for the human,

wherein a value for the human greater than ~~a value for a control~~ zero indicates a greater susceptibility to the oxidative stress condition for the human,

the method ~~hereby~~ thereby assessing the degree to which the human is susceptible to ~~the~~ an undesirable oxidative stress condition relative to a human with fewer or no oxidative damage-associated polymorphisms in these two genes.

111. (Currently Amended) A method comprising assessing occurrence in a human's genome of a quantity of ~~an~~ oxidative damage-associated ~~polymorphism polymorphisms~~ in each of two genes, the genes consisting of a superoxide dismutase gene and a catalase gene,

wherein the oxidative damage-associated polymorphism in the catalase gene is a polymorphism manifested as a change from a cytosine residue to a thymine residue at nucleotide residue -262 of the catalase gene and the oxidative damage-associated polymorphism in a superoxide dismutase gene is selected from the group consisting of:

- a) a polymorphism manifested as a change from an alanine residue to a valine residue at amino acid residue 9 of manganese superoxide dismutase (MnSOD);
- b) a polymorphism manifested as a change from an isoleucine residue to a thymine residue at amino acid residue 58 of MnSOD;
- c) a polymorphism manifested as a change from a valine residue to a glutamic acid residue at amino acid residue 7 of copper/zinc superoxide dismutase (CZSOD); and
- d) a polymorphism manifested as a change from a cysteine residue to a phenylalanine residue at amino acid residue 6 of CZSOD;

whereby each occurrence of an oxidative damage-associated polymorphism in each gene indicates an increased susceptibility of the human to a pathology involving oxidative damage relative to another human with fewer or no oxidative damage-associated ~~polymorphism polymorphisms~~, and thus a desirability to administer an antioxidant composition ~~or an increased dose of an antioxidant composition~~ to the human.

112. (Currently Amended) The method of claim 105, A method comprising assessing an occurrence in a human's genome of a quantity of an oxidative damage associated

~~polymorphism in each of two genes, the genes consisting of a superoxide dismutase gene and a catalase gene,~~

— wherein the oxidative damage associated polymorphism in the catalase gene is a polymorphism manifested as a change from a cytosine residue to a thymine residue at nucleotide residue 262 of the catalase gene and the oxidative damage associated polymorphism in a superoxide dismutase gene is selected from the group consisting of:

- a) — a polymorphism manifested as a change from an alanine residue to a valine residue at amino acid residue 9 of manganese superoxide dismutase (MnSOD);
- b) — a polymorphism manifested as a change form from an isoleucine residue to a thymine residue at amino acid residue 58 of MnSOD
- c) — a polymorphism manifested as a change from a valine residue to a glutamic acid residue at amino acid residue 7 of copper/zinc superoxide dismutase (CZSOD); and
- d) — a polymorphism manifested as a change from a cysteine residue to a phenylalanine residue at amino acid residue 6 of CZSOD;

whereby each occurrence of an oxidative damage associated polymorphism in each gene indicates an increased susceptibility of the human to a pathology involving oxidative damage to the human, relative to a human with fewer or no oxidative damage associated polymorphisms, and wherein the method assesses a relative susceptibility of the human to the oxidative damage.

CLEAN COPY OF THE CLAIMS AS AMENDED
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- 1-104. (Cancelled)
105. (Currently Amended) A method of selecting a dose of an anti-oxidant composition for administration to a human, the method comprising assessing an occurrence in a human's genome of a quantity of an oxidative damage-associated polymorphisms in each of two genes, the genes consisting of a superoxide dismutase gene and a catalase gene wherein the oxidative damage-associated polymorphism in the catalase gene is a polymorphism manifested as a change from a cytosine residue to a thymine residue at nucleotide residue -262 of the catalase gene and the oxidative damage-associated polymorphism in a superoxide dismutase gene is selected from the group consisting of:
- a) a polymorphism manifested as a change from an alanine residue to a valine residue at amino acid residue 9 of manganese superoxide dismutase (MnSOD);
 - b) a polymorphism manifested as a change from an isoleucine residue to a thymine residue at amino acid residue 58 of MnSOD;
 - c) a polymorphism manifested as a change from a valine residue to a glutamic acid residue at amino acid residue 7 of copper/zinc superoxide dismutase (CZSOD); and
 - d) a polymorphism manifested as a change from a cysteine residue to a phenylalanine residue at amino acid residue 6 of CZSOD;
- whereby each occurrence of an oxidative damage-associated polymorphism in each gene indicates an increased susceptibility of the human to a pathology involving oxidative damage to the human, relative to a human with fewer or no oxidative damage-associated polymorphisms.

106-109. (Cancelled)

110. (Currently Amended) The method of claim 105, the method comprising assessing the degree to which a human is susceptible to an undesirable oxidative stress condition by identifying a polymorphism in each of a gene encoding superoxide dismutase, and a gene encoding a catalase,

the polymorphism identified as correlated with the exhibition by a human of a pathology involving oxidative damage, thereafter calculating a susceptibility value for the condition by either

summing the identified polymorphisms to yield a value for the human, or

assigning a weighting factor to each polymorphism and then summing the weighting factors to yield a value for the human,

wherein a value for the human greater than zero indicates a greater susceptibility to the oxidative stress condition for the human,

the method thereby assessing the degree to which the human is susceptible to the an undesirable oxidative stress condition relative to a human with fewer or no oxidative damage-associated polymorphisms in these two genes.

111. (Currently Amended) A method comprising assessing occurrence in a human's genome of a quantity of oxidative damage-associated polymorphisms in each of two genes, the genes consisting of a superoxide dismutase gene and a catalase gene,

wherein the oxidative damage-associated polymorphism in the catalase gene is a polymorphism manifested as a change from a cytosine residue to a thymine residue at nucleotide residue -262 of the catalase gene and the oxidative damage-associated polymorphism in a superoxide dismutase gene is selected from the group consisting of:

a) a polymorphism manifested as a change from an alanine residue to a valine residue at amino acid residue 9 of manganese superoxide dismutase (MnSOD);
b) a polymorphism manifested as a change from an isoleucine residue to a thymine residue at amino acid residue 58 of MnSOD;
c) a polymorphism manifested as a change from a valine residue to a glutamic acid residue at amino acid residue 7 of copper/zinc superoxide dismutase (CZSOD); and
d) a polymorphism manifested as a change from a cysteine residue to a phenylalanine residue at amino acid residue 6 of CZSOD;

whereby each occurrence of an oxidative damage-associated polymorphism in each gene indicates an increased susceptibility of the human to a pathology involving oxidative damage relative to another human with fewer or no oxidative damage-associated polymorphisms, and thus a desirability to administer an antioxidant composition to the human.

112. (Currently Amended) The method of claim 105, wherein the method assesses a relative susceptibility of the human to the oxidative damage.